OIPE JC10
JUN 22 2004
PATENT & TRADEMARK OFFICE

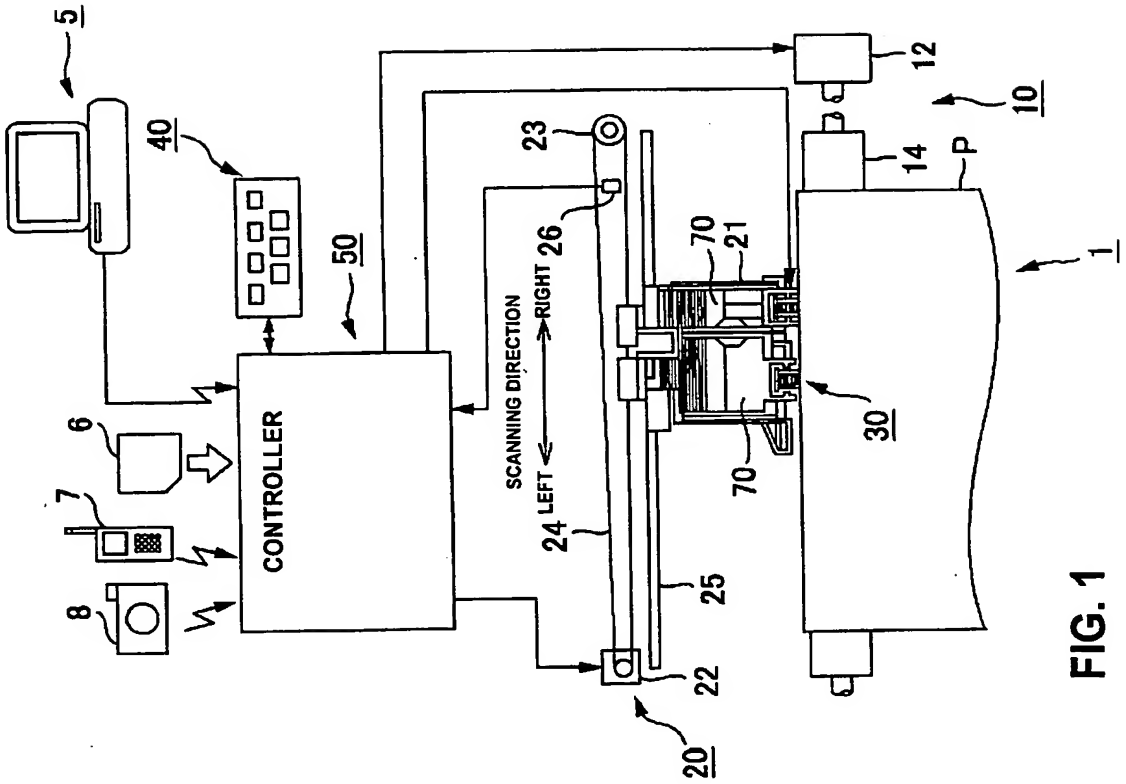

FIG. 1

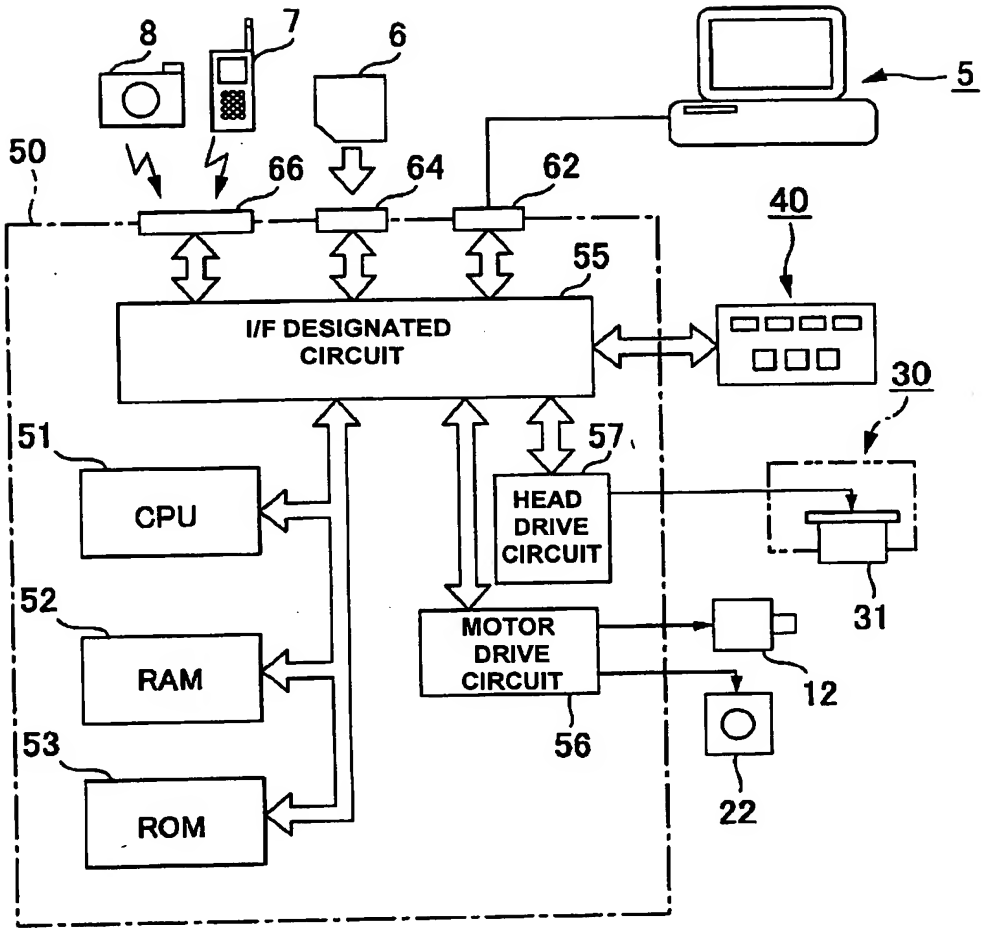
8
7
6
5
50
66
64
62
40
55
I/F DESIGNATED CIRCUIT
30
51
57
CPU
HEAD DRIVE CIRCUIT
52
MOTOR DRIVE CIRCUIT
31
RAM
12
53
56
ROM
22

FIG. 2

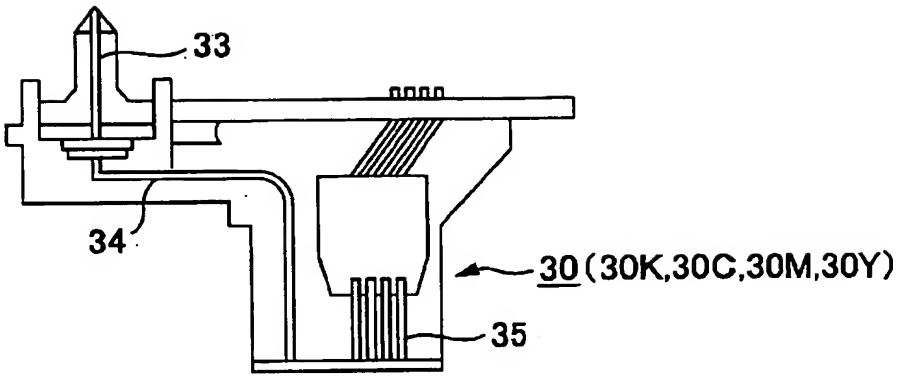
33
34
30 (30K,30C,30M,30Y)
35

FIG. 3A

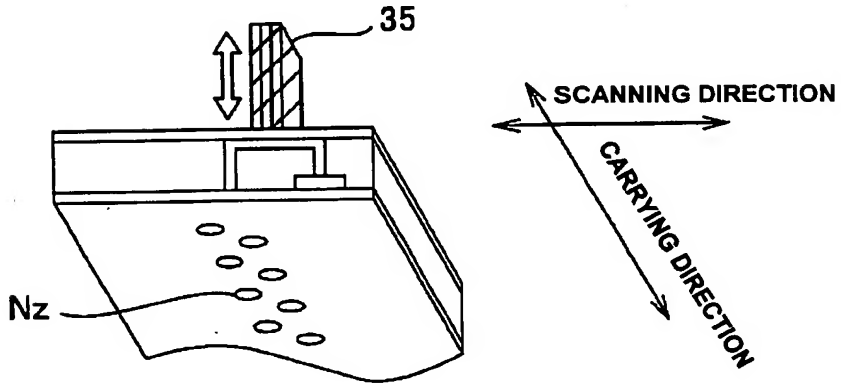
35
SCANNING DIRECTION
CARRYING DIRECTION
Nz

FIG. 3B

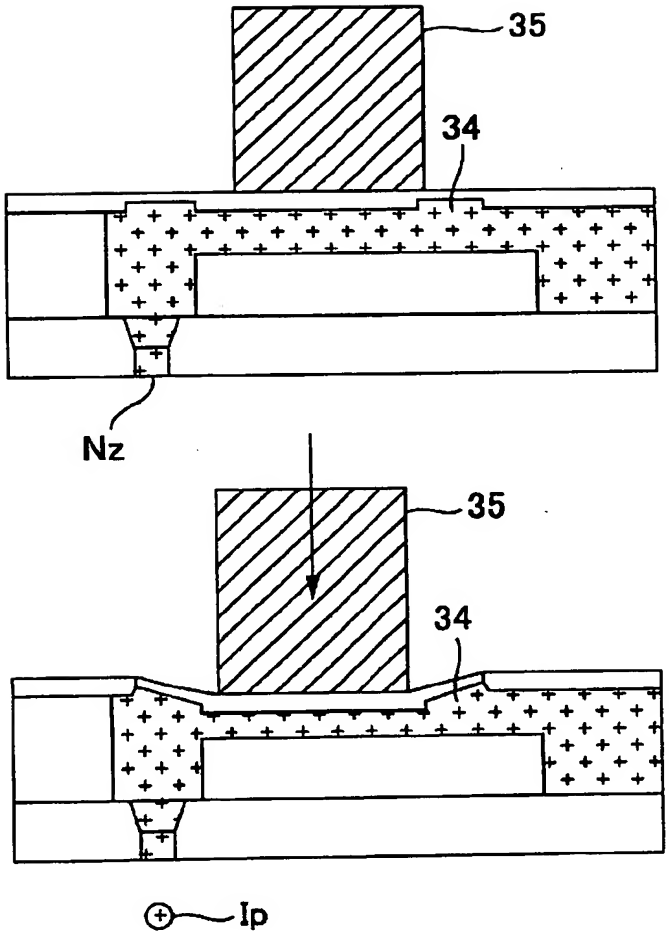

FIG. 4

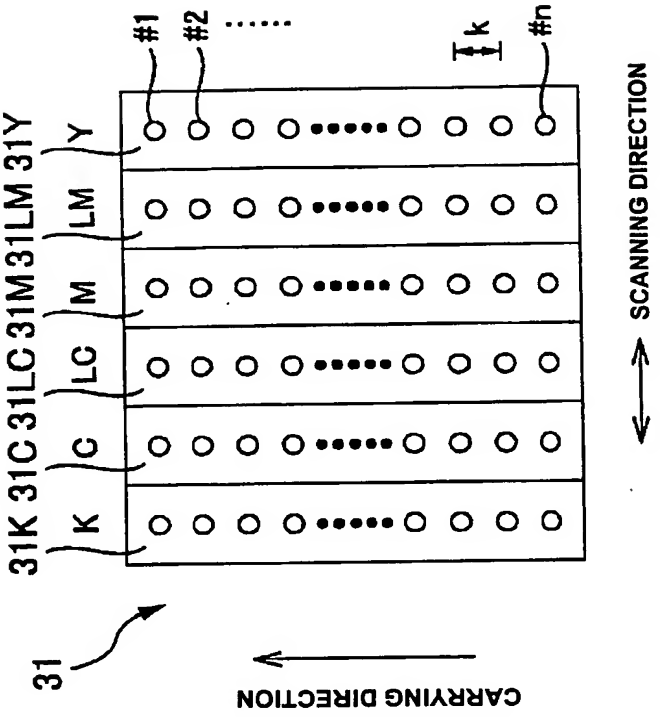
#1
#2
.....
k
#n
31K 31C 31LC 31M 31LM 31Y
K
C
LC
M
LM
Y
SCANNING DIRECTION
31
CARRYING DIRECTION

FIG. 5

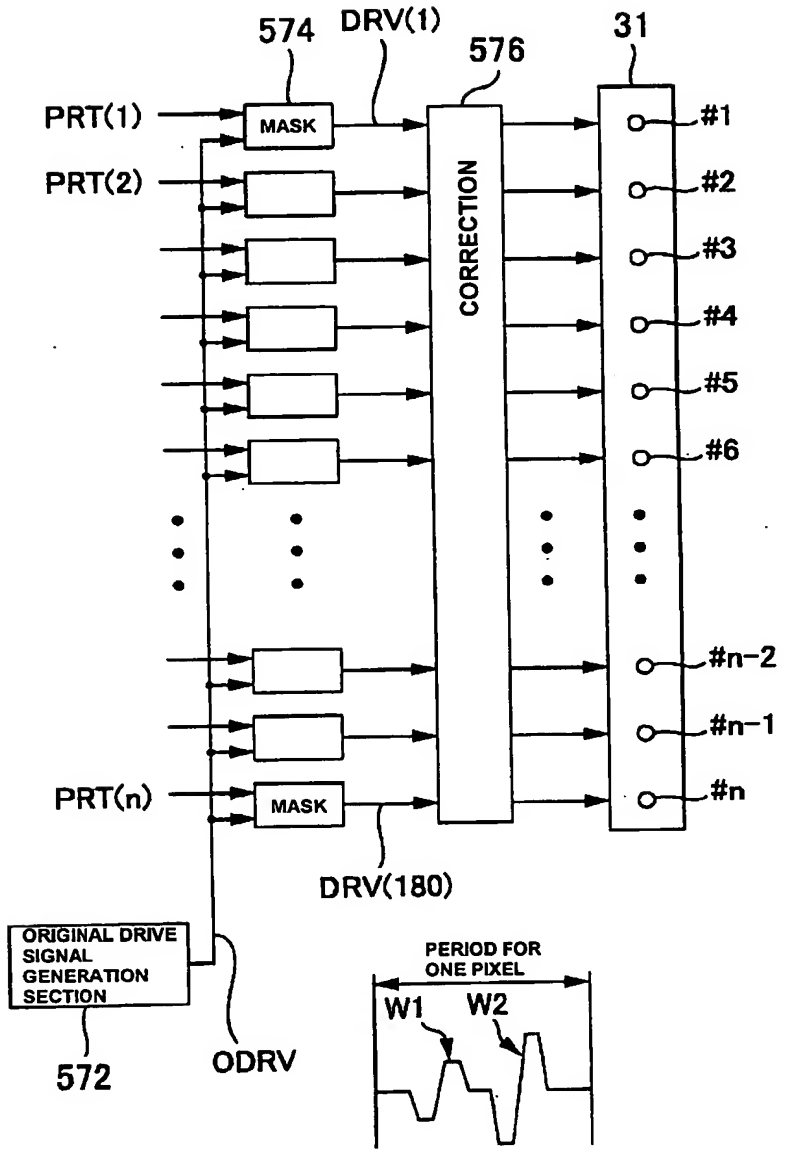
574
DRV(1)
576
31
PRT(1)
MASK
PRT(2)
CORRECTION
#1
#2
#3
#4
#5
#6
#n-2
#n-1
#n
PRT(n)
MASK
DRV(180)
ORIGINAL DRIVE SIGNAL GENERATION SECTION
572
ODRV
PERIOD FOR ONE PIXEL
W1
W2

FIG. 6

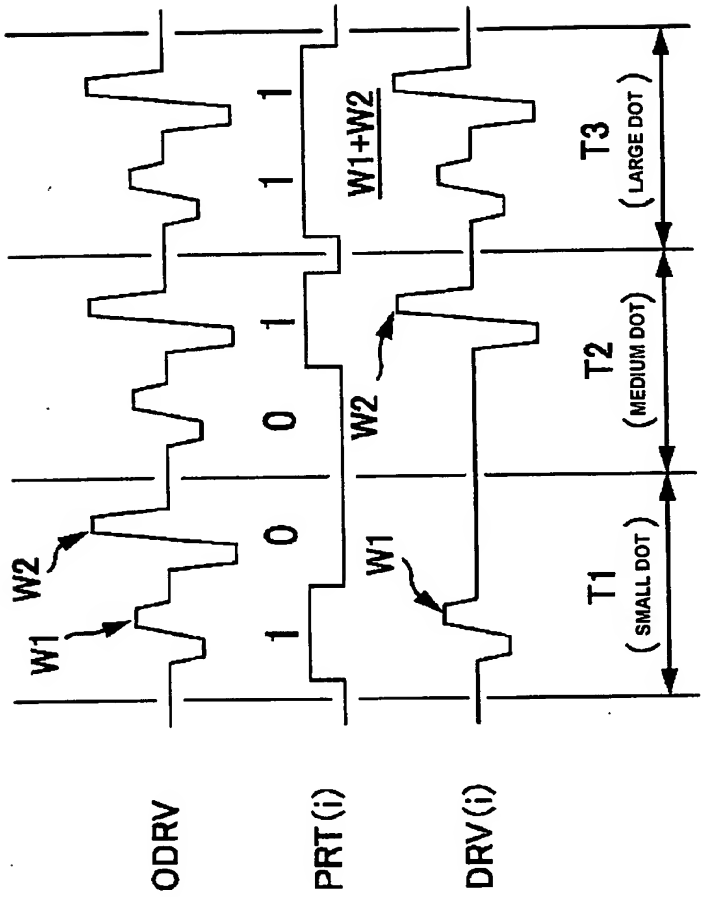
ODRV
PRT(i)
DRV(i)
W1
W2
1
0
0
1
1
1
W1
W2
W1+W2
T1
(SMALL DOT)
T2
(MEDIUM DOT)
T3
(LARGE DOT)

FIG. 7

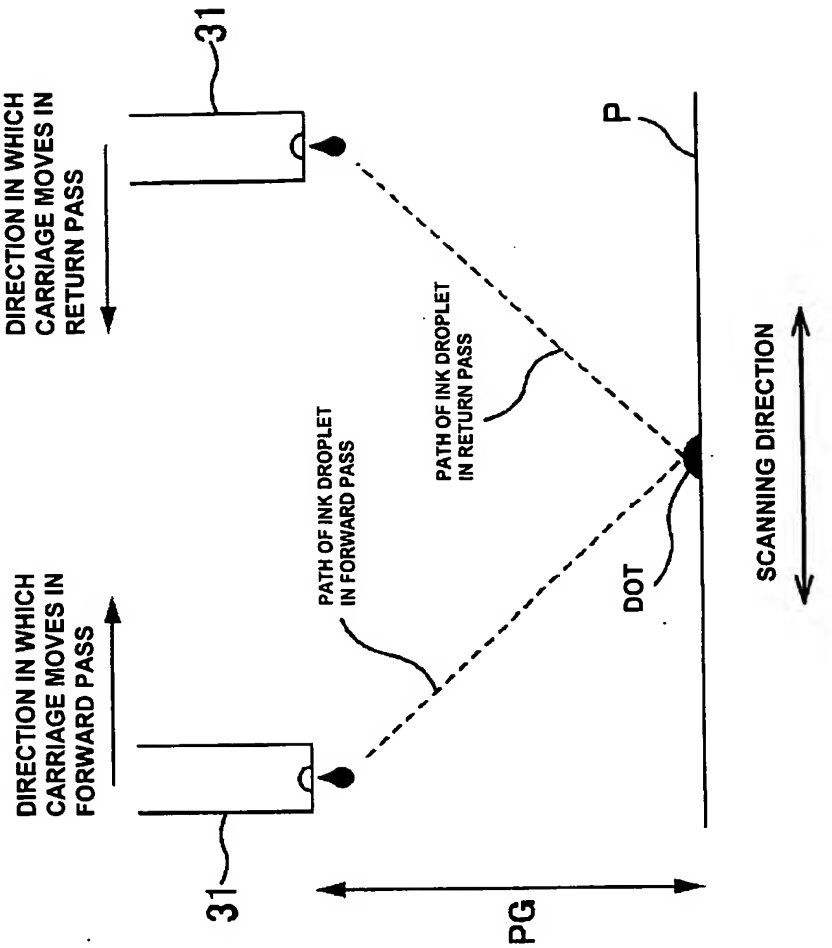
31
DIRECTION IN WHICH CARRIAGE MOVES IN RETURN PASS
P
PATH OF INK DROPLET IN RETURN PASS
PATH OF INK DROPLET IN FORWARD PASS
DOT
SCANNING DIRECTION
DIRECTION IN WHICH CARRIAGE MOVES IN FORWARD PASS
31
PG

FIG. 8

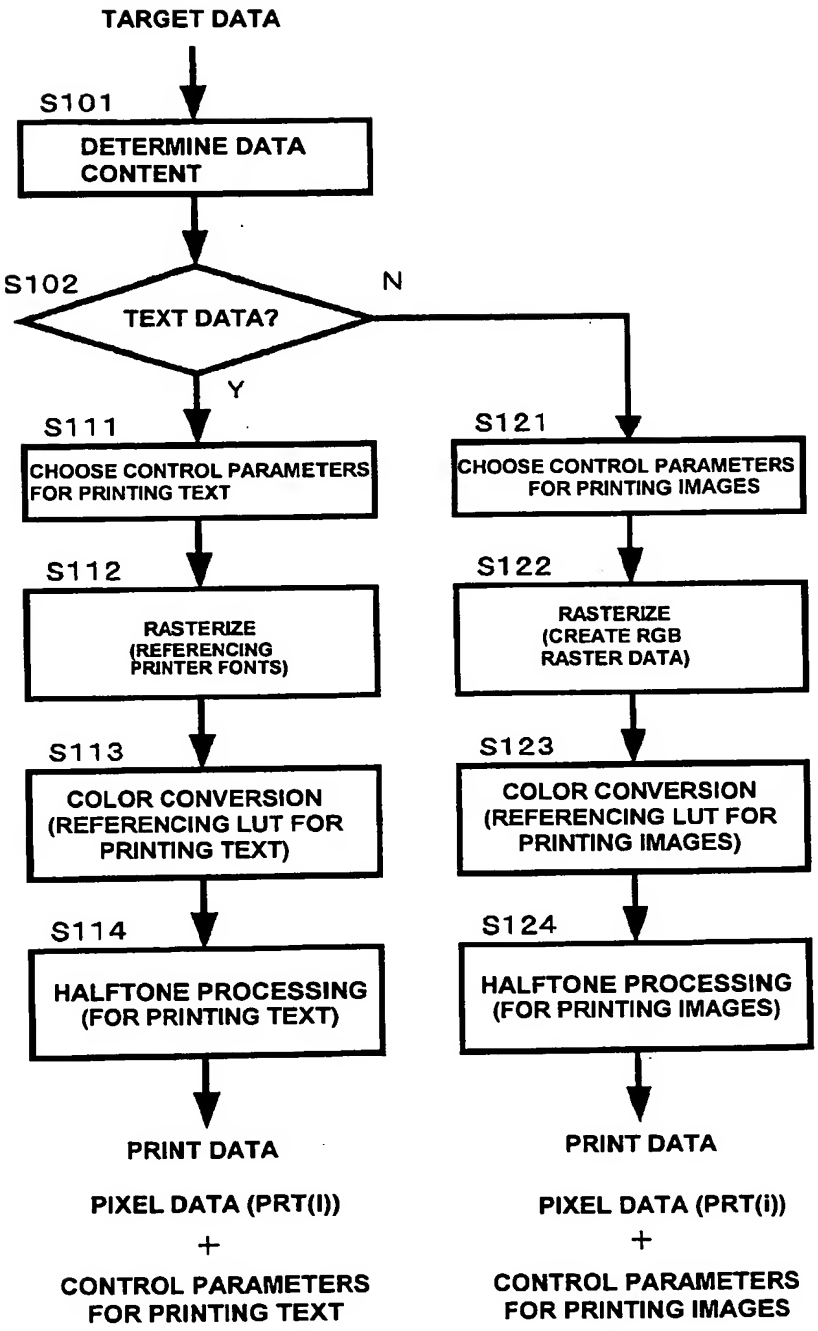
TARGET DATA
S101
DETERMINE DATA CONTENT
S102
TEXT DATA?
N
Y
S111
CHOOSE CONTROL PARAMETERS FOR PRINTING TEXT
S112
RASTERIZE (REFERENCING PRINTER FONTS)
S113
COLOR CONVERSION (REFERENCING LUT FOR PRINTING TEXT)
S114
HALFTONE PROCESSING (FOR PRINTING TEXT)
PRINT DATA
PIXEL DATA (PRT(I))
+
CONTROL PARAMETERS FOR PRINTING TEXT
S121
CHOOSE CONTROL PARAMETERS FOR PRINTING IMAGES
S122
RASTERIZE (CREATE RGB RASTER DATA)
S123
COLOR CONVERSION (REFERENCING LUT FOR PRINTING IMAGES)
S124
HALFTONE PROCESSING (FOR PRINTING IMAGES)
PRINT DATA
PIXEL DATA (PRT(i))
+
CONTROL PARAMETERS FOR PRINTING IMAGES

FIG. 9

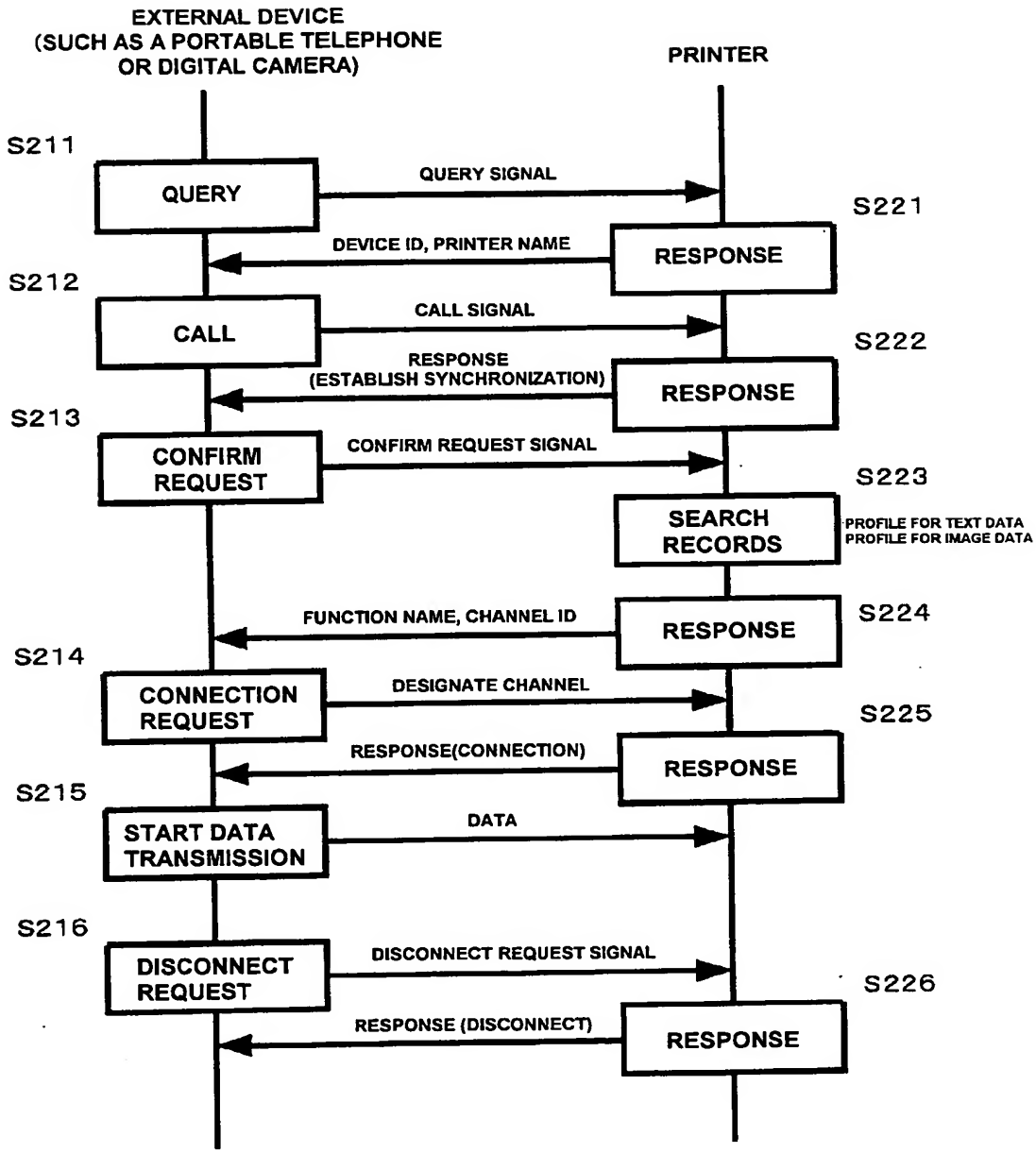
EXTERNAL DEVICE
(SUCH AS A PORTABLE TELEPHONE
OR DIGITAL CAMERA)
PRINTER
S211
QUERY
QUERY SIGNAL
S221
DEVICE ID, PRINTER NAME
RESPONSE
S212
CALL
CALL SIGNAL
S222
RESPONSE
(ESTABLISH SYNCHRONIZATION)
RESPONSE
S213
CONFIRM
REQUEST
CONFIRM REQUEST SIGNAL
S223
SEARCH
RECORDS
PROFILE FOR TEXT DATA
PROFILE FOR IMAGE DATA
FUNCTION NAME, CHANNEL ID
RESPONSE
S224
S214
CONNECTION
REQUEST
DESIGNATE CHANNEL
S225
RESPONSE(CONNECTION)
RESPONSE
S215
START DATA
TRANSMISSION
DATA
S216
DISCONNECT
REQUEST
DISCONNECT REQUEST SIGNAL
S226
RESPONSE (DISCONNECT)
RESPONSE

FIG. 10

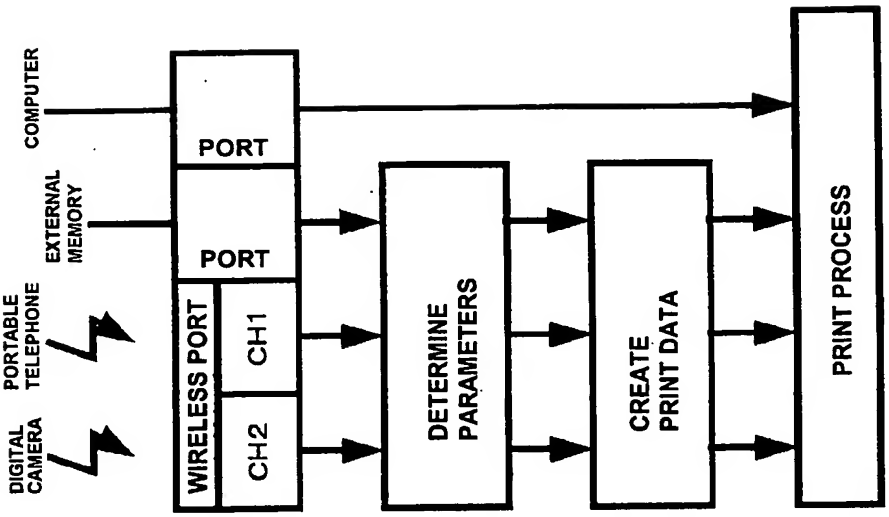
COMPUTER
EXTERNAL MEMORY
PORTABLE TELEPHONE
DIGITAL CAMERA
PORT
PORT
WIRELESS PORT
CH1
CH2
DETERMINE PARAMETERS
CREATE PRINT DATA
PRINT PROCESS

FIG. 11

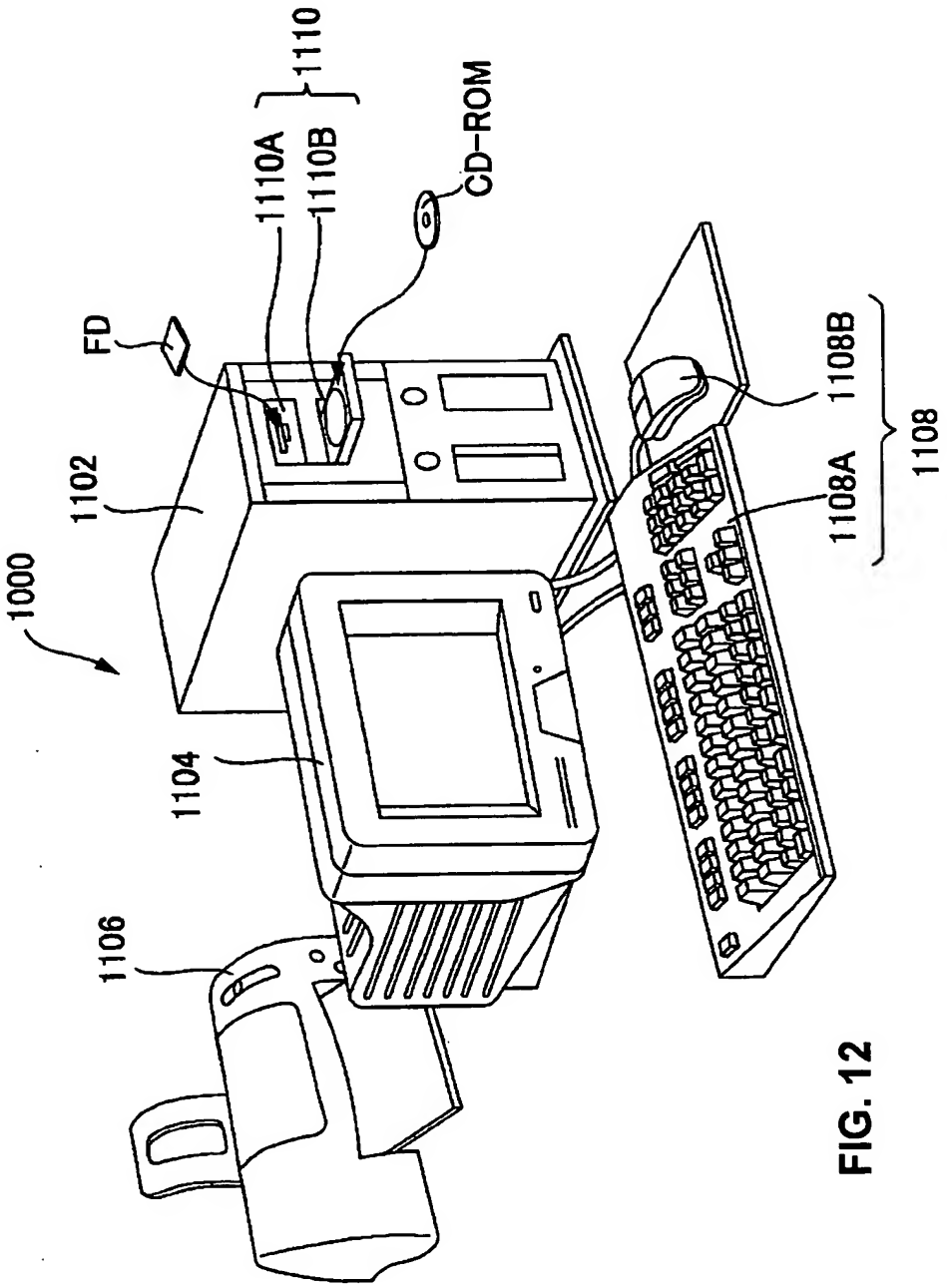
1000
1102
1104
1106
FD
1110A
1110B
1110
CD-ROM
1108B
1108A
1108

FIG. 12

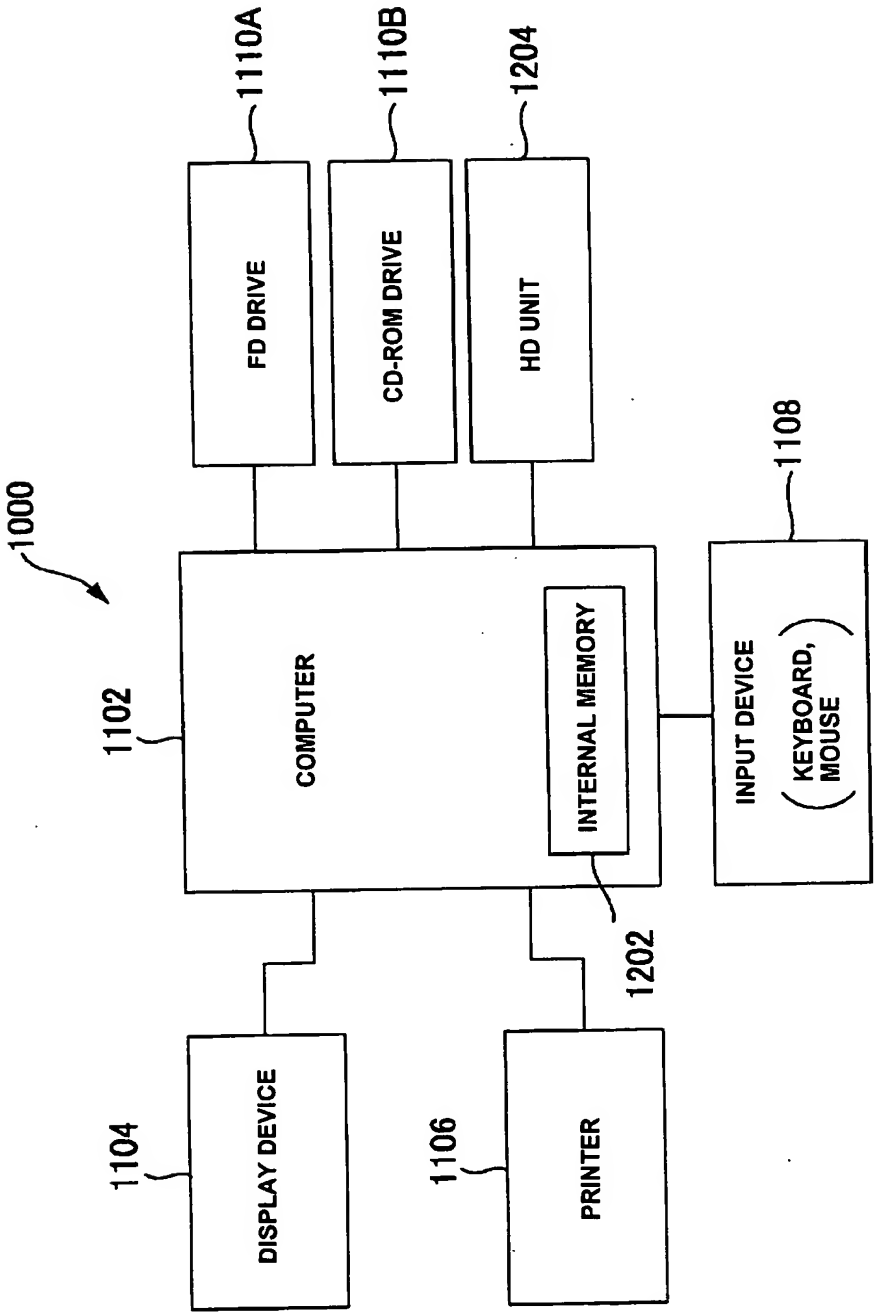
1000
1102
COMPUTER
INTERNAL MEMORY
1202
1104
DISPLAY DEVICE
1106
PRINTER
1108
INPUT DEVICE
(KEYBOARD, MOUSE)
1110A
FD DRIVE
1110B
CD-ROM DRIVE
1204
HD UNIT

FIG. 13

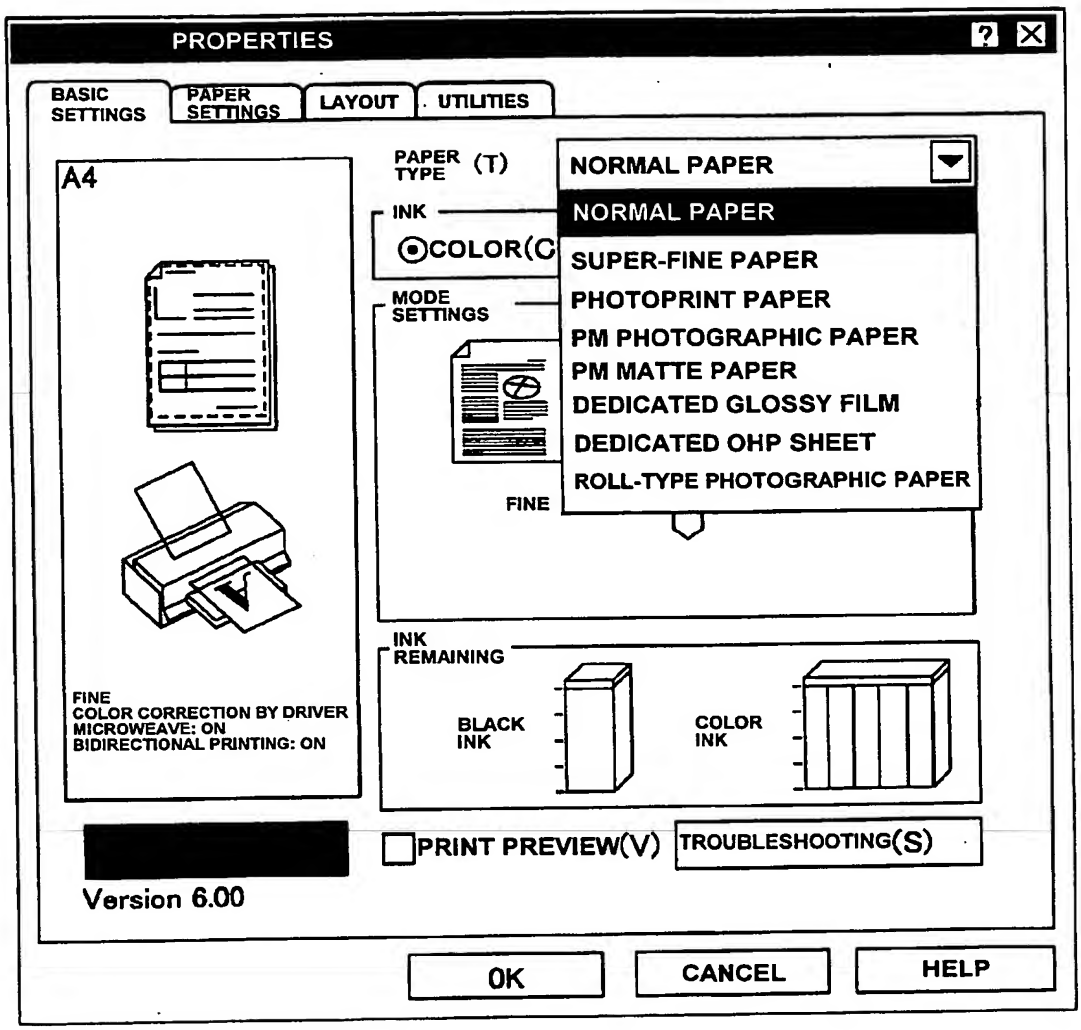
PROPERTIES
BASIC SETTINGS
PAPER SETTINGS
LAYOUT
UTILITIES
A4
FINE
COLOR CORRECTION BY DRIVER
MICROWEAVE: ON
BIDIRECTIONAL PRINTING: ON
PAPER TYPE (T)
NORMAL PAPER
INK
COLOR(C
MODE SETTINGS
FINE
NORMAL PAPER
SUPER-FINE PAPER
PHOTOPRINT PAPER
PM PHOTOGRAPHIC PAPER
PM MATTE PAPER
DEDICATED GLOSSY FILM
DEDICATED OHP SHEET
ROLL-TYPE PHOTOGRAPHIC PAPER
INK REMAINING
BLACK INK
COLOR INK
PRINT PREVIEW(V)
TROUBLESHOOTING(S)
Version 6.00
OK
CANCEL
HELP

FIG. 14

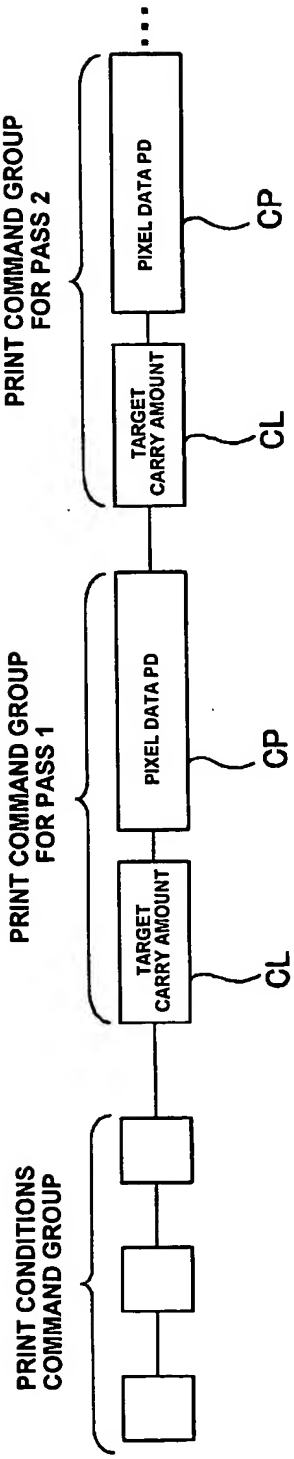
PRINT CONDITIONS COMMAND GROUP
PRINT COMMAND GROUP FOR PASS 1
TARGET CARRY AMOUNT
CL
PIXEL DATA PD
CP
PRINT COMMAND GROUP FOR PASS 2
TARGET CARRY AMOUNT
CL
PIXEL DATA PD
CP
...

FIG. 15

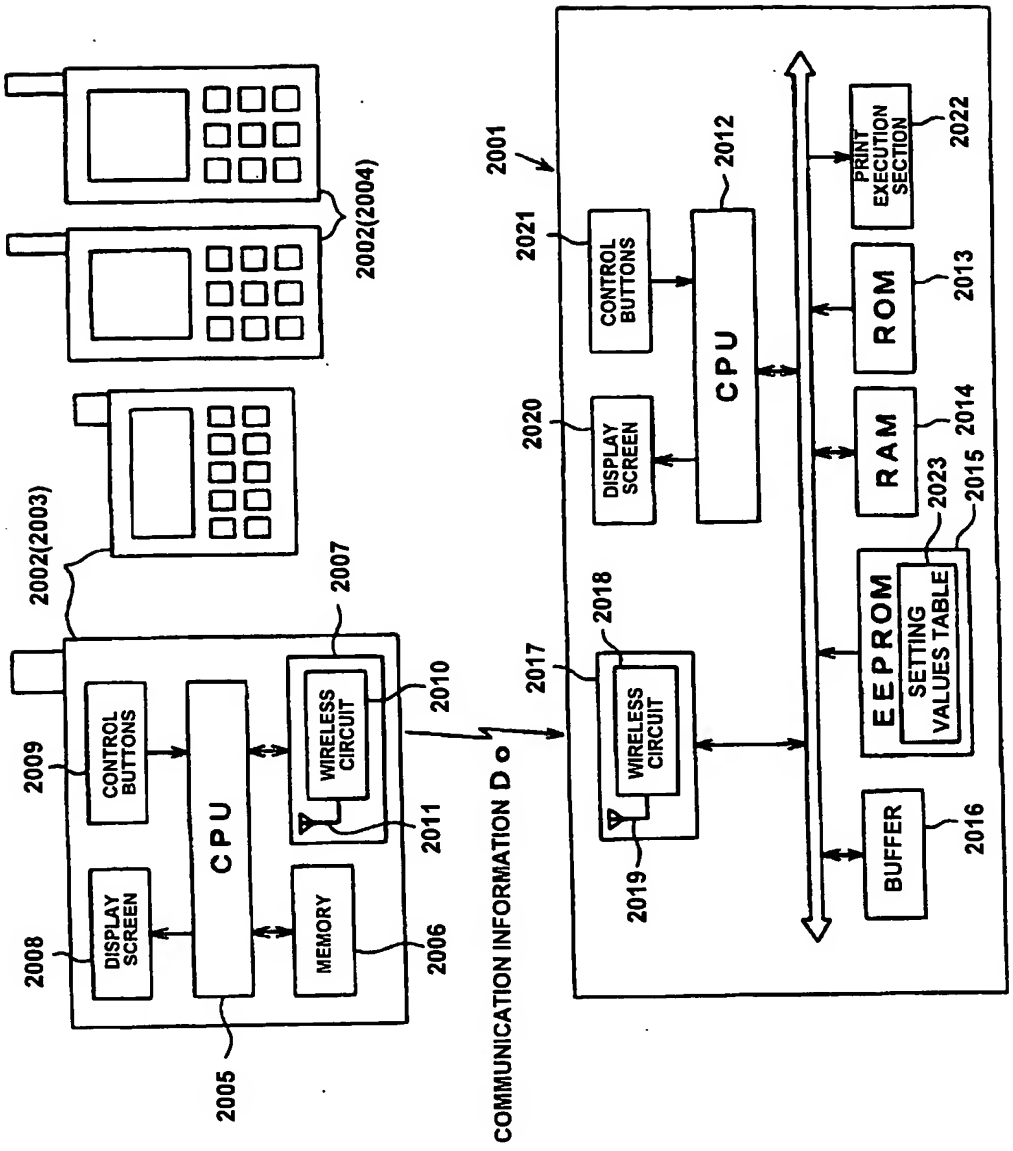
2002(2004)
2002(2003)
2007
2009
CONTROL BUTTONS
CPU
WIRELESS CIRCUIT
2010
2011
2008
DISPLAY SCREEN
MEMORY
2006
2005
COMMUNICATION INFORMATION D o
2001
2021
CONTROL BUTTONS
2012
2020
DISPLAY SCREEN
CPU
2018
2017
WIRELESS CIRCUIT
2019
EEPROM
SETTING VALUES TABLE
2023
2015
RAM
2014
ROM
2013
PRINT EXECUTION SECTION
2022
BUFFER
2016

FIG. 16

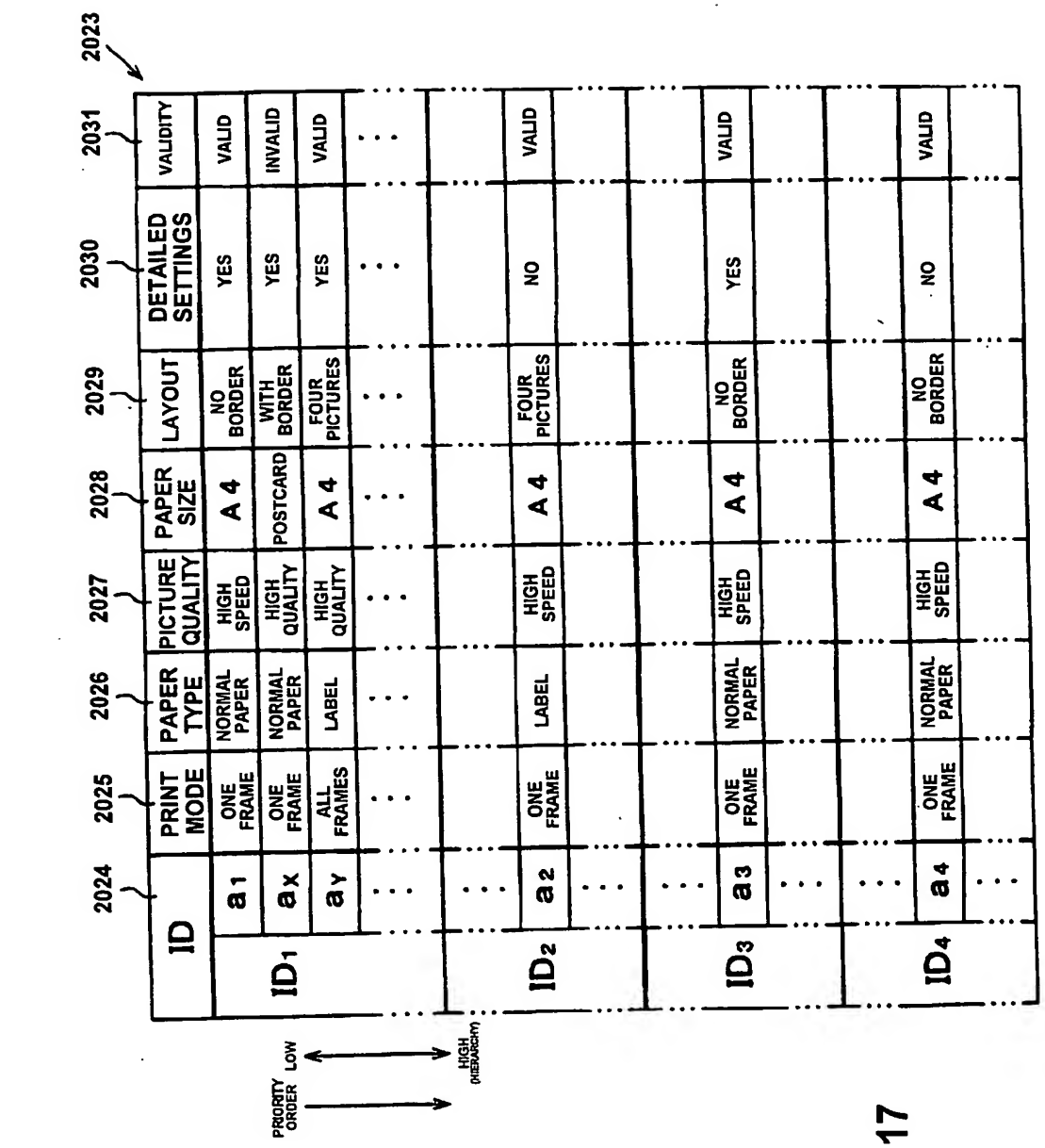
2023
2024
2025
2026
2027
2028
2029
2030
2031
ID
PRINT MODE
PAPER TYPE
PICTURE QUALITY
PAPER SIZE
LAYOUT
DETAILED SETTINGS
VALIDITY
ID1
a1
ONE FRAME
NORMAL PAPER
HIGH SPEED
A 4
NO BORDER
YES
VALID
ax
ONE FRAME
NORMAL PAPER
HIGH QUALITY
POSTCARD
WITH BORDER
YES
INVALID
ay
ALL FRAMES
LABEL
HIGH QUALITY
A 4
FOUR PICTURES
YES
VALID
ID2
a2
ONE FRAME
LABEL
HIGH SPEED
A 4
FOUR PICTURES
NO
VALID
ID3
a3
ONE FRAME
NORMAL PAPER
HIGH SPEED
A 4
NO BORDER
YES
VALID
ID4
a4
ONE FRAME
NORMAL PAPER
HIGH SPEED
A 4
NO BORDER
NO
VALID
PRIORITY ORDER
LOW
HIGH
(HIERARCHY)

FIG. 17

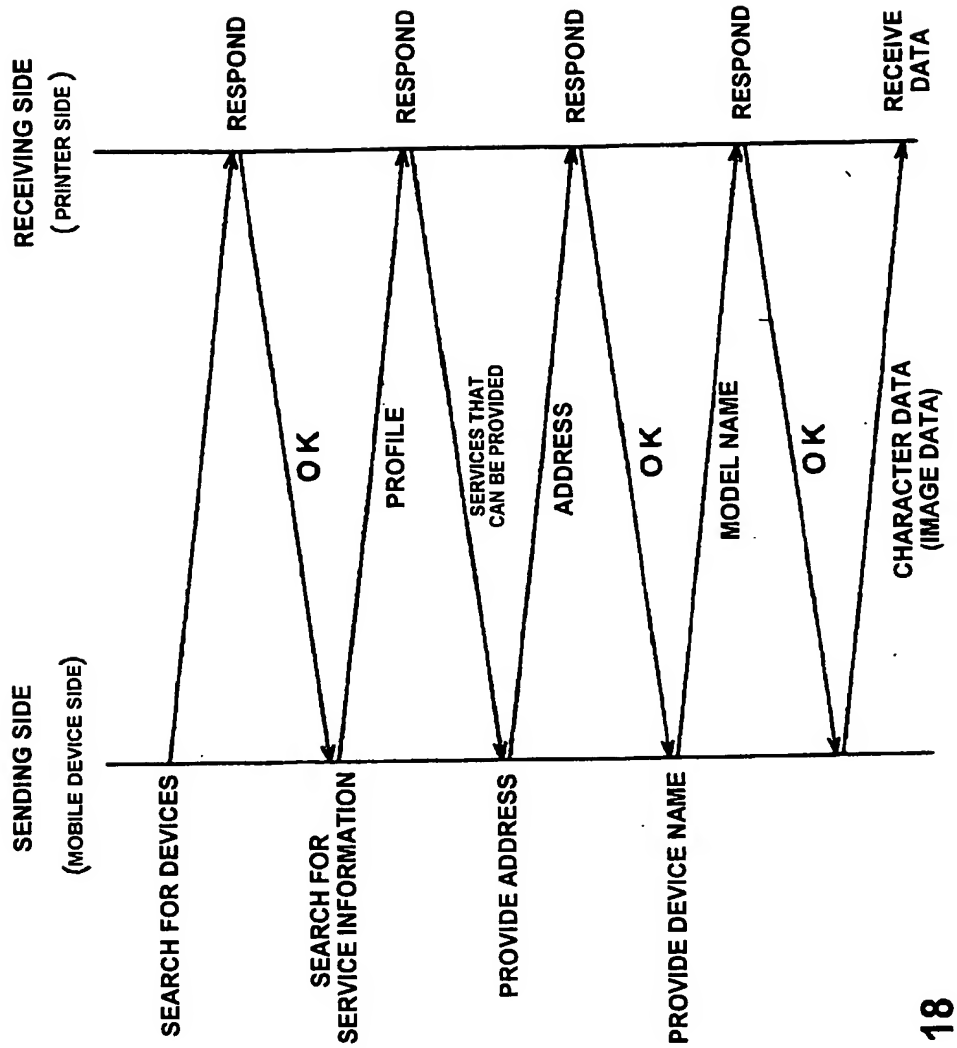
SENDING SIDE
(MOBILE DEVICE SIDE)
RECEIVING SIDE
(PRINTER SIDE)
SEARCH FOR DEVICES
RESPOND
SEARCH FOR SERVICE INFORMATION
OK
PROVIDE ADDRESS
RESPOND
PROFILE
SERVICES THAT CAN BE PROVIDED
PROVIDE DEVICE NAME
RESPOND
ADDRESS
OK
MODEL NAME
RESPOND
OK
CHARACTER DATA (IMAGE DATA)
RECEIVE DATA

FIG. 18

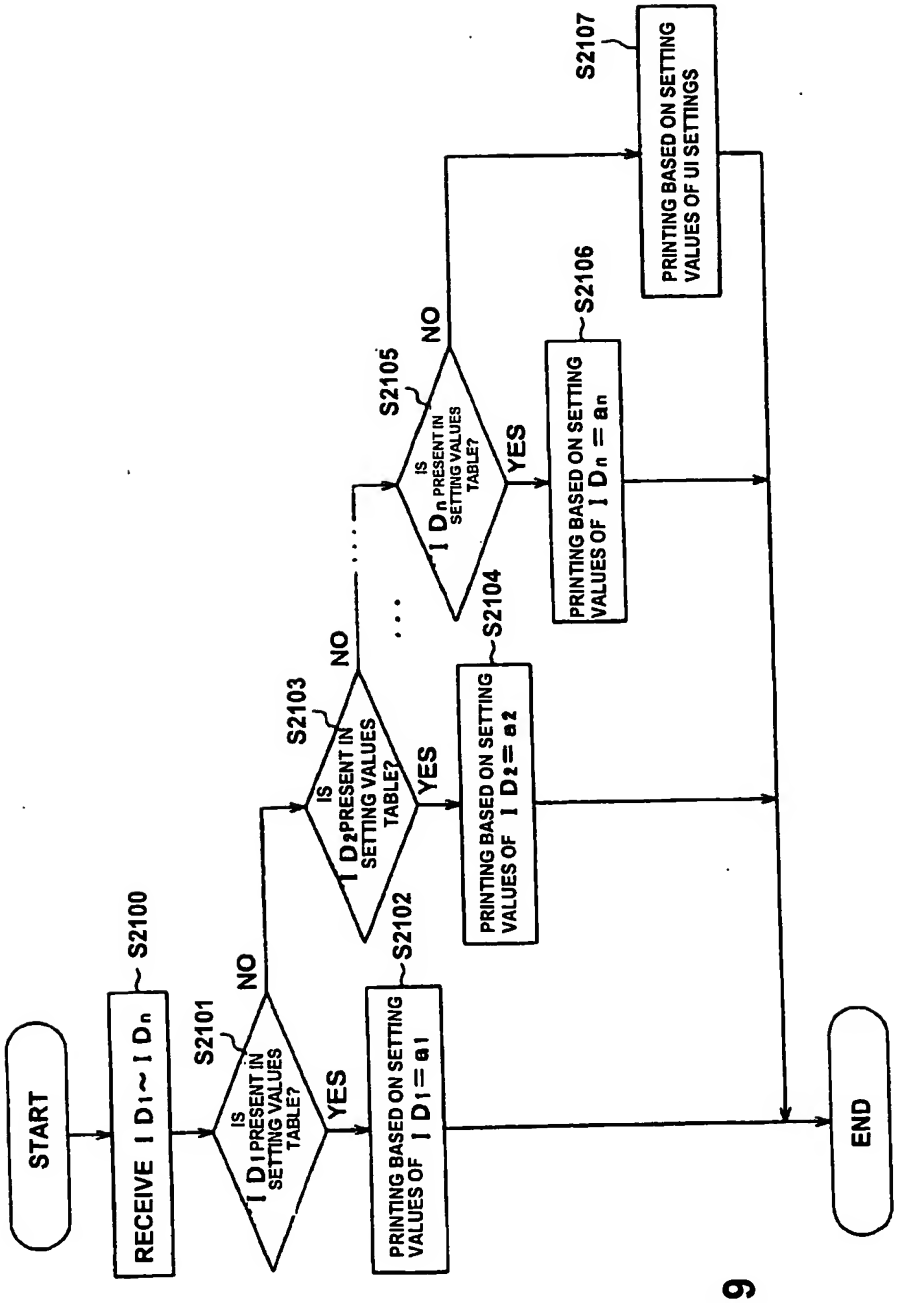
START
S2100
RECEIVE ID1~IDn
S2101
IS ID1 PRESENT IN SETTING VALUES TABLE?
NO
YES
S2102
PRINTING BASED ON SETTING VALUES OF ID1=a1
S2103
IS ID2 PRESENT IN SETTING VALUES TABLE?
NO
YES
S2104
PRINTING BASED ON SETTING VALUES OF ID2=a2
S2105
IS IDn PRESENT IN SETTING VALUES TABLE?
NO
YES
S2106
PRINTING BASED ON SETTING VALUES OF IDn=an
S2107
PRINTING BASED ON SETTING VALUES OF UI SETTINGS
END

FIG. 19

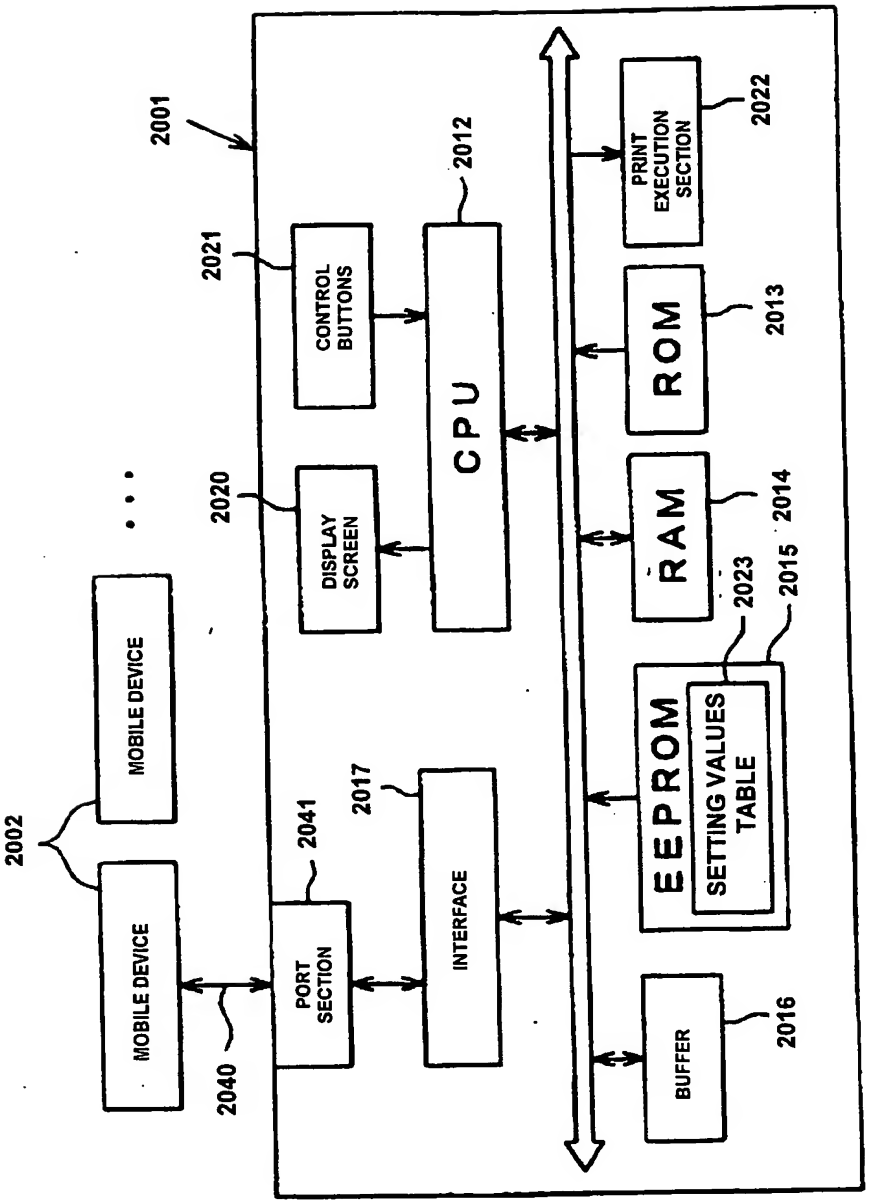
2001
2002
MOBILE DEVICE
MOBILE DEVICE
2040
PORT SECTION
2041
INTERFACE
2017
DISPLAY SCREEN
2020
CONTROL BUTTONS
2021
CPU
2012
BUFFER
2016
EEPROM
SETTING VALUES TABLE
2023
2015
RAM
2014
ROM
2013
PRINT EXECUTION SECTION
2022

FIG. 20

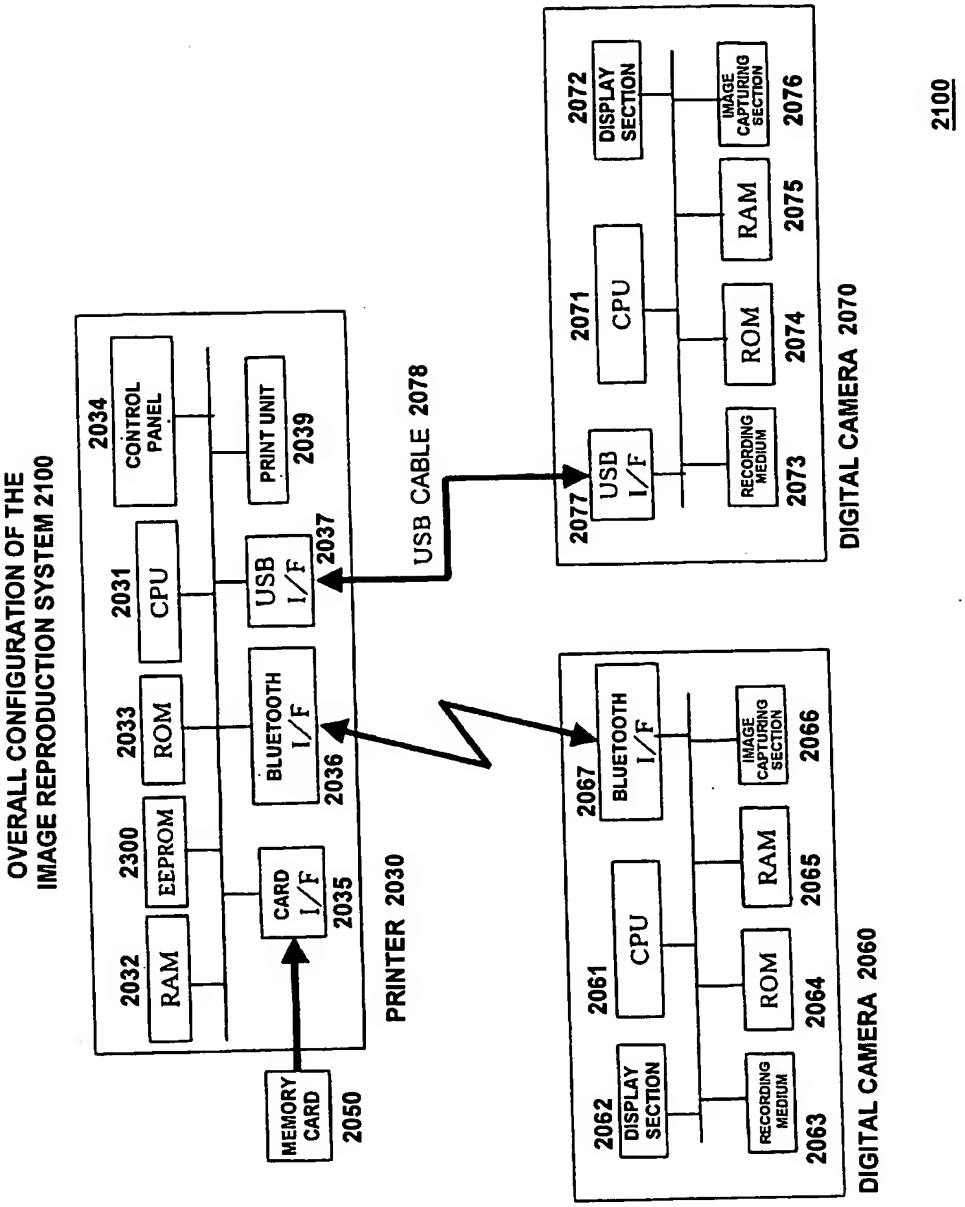
OVERALL CONFIGURATION OF THE IMAGE REPRODUCTION SYSTEM 2100
PRINTER 2030
2032 RAM
2300 EEPROM
2033 ROM
2031 CPU
2034 CONTROL PANEL
CARD I/F 2035
BLUETOOTH I/F 2036
USB I/F 2037
PRINT UNIT 2039
MEMORY CARD 2050
USB CABLE 2078
DIGITAL CAMERA 2060
2062 DISPLAY SECTION
2061 CPU
2067 BLUETOOTH I/F
RECORDING MEDIUM 2063
2064 ROM
2065 RAM
IMAGE CAPTURING SECTION 2066
DIGITAL CAMERA 2070
2077 USB I/F
2071 CPU
2072 DISPLAY SECTION
RECORDING MEDIUM 2073
2074 ROM
2075 RAM
IMAGE CAPTURING SECTION 2076
2100

FIG. 21

	DEFAULT (CARD)	CAMERA (USB)	BIP	BPP
LAYOUT	ONE PICTURE, NO BORDER	ONE PICTURE, NO BORDER	ONE PICTURE, NO BORDER	ONE PICTURE, WITH BORDERS
SIZE	A4	L PRINT	L PRINT	A4
TYPE	PHOTOGRAPHIC PAPER	PHOTOGRAPHIC PAPER	PHOTOGRAPHIC PAPER	NORMAL PAPER
IMAGE PROCESSING	PIM	APF	PIM	NONE

FIG. 22

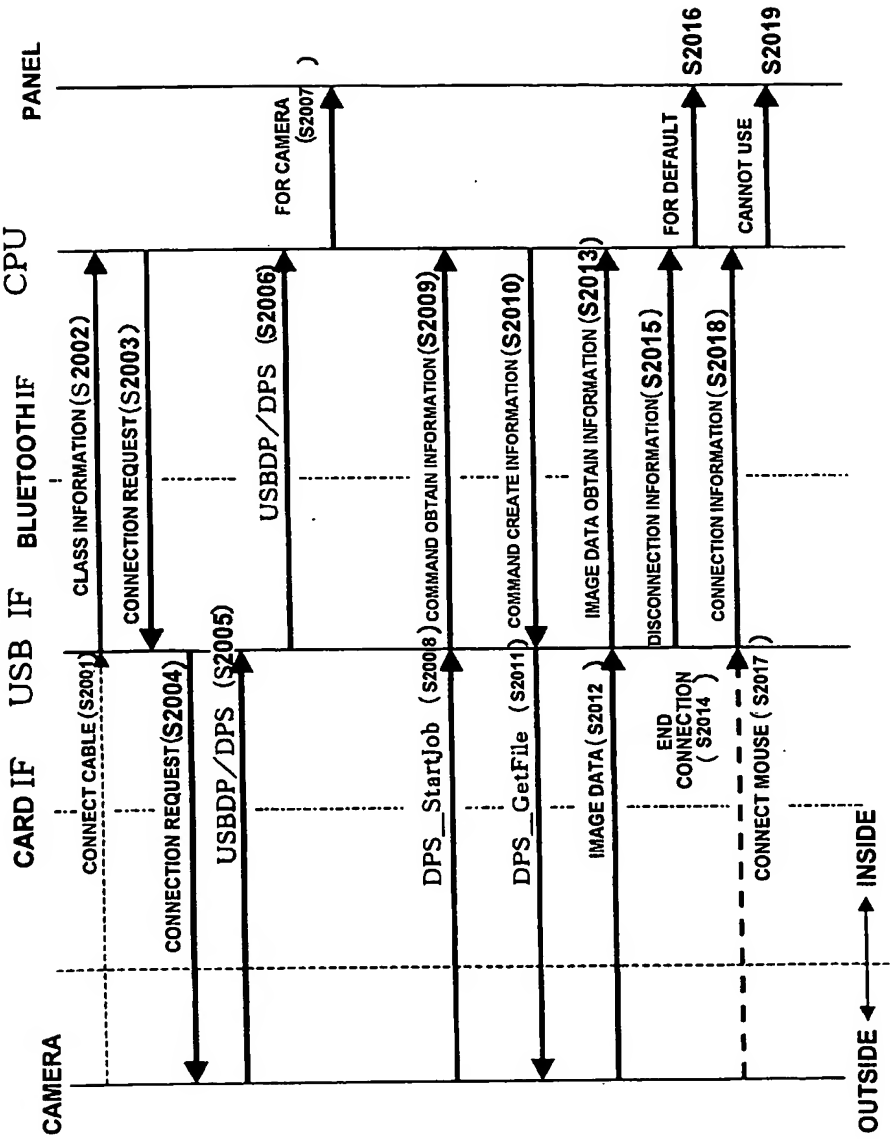
CAMERA
CARD IF
USB IF
BLUETOOTH IF
CPU
PANEL
OUTSIDE
INSIDE
CONNECT CABLE (S2001)
CLASS INFORMATION (S2002)
CONNECTION REQUEST (S2003)
CONNECTION REQUEST (S2004)
USBDP/DPS (S2005)
USBDP/DPS (S2006)
FOR CAMERA (S2007)
DPS_StartJob (S2008)
COMMAND OBTAIN INFORMATION (S2009)
DPS_GetFile (S2011)
COMMAND CREATE INFORMATION (S2010)
IMAGE DATA (S2012)
IMAGE DATA OBTAIN INFORMATION (S2013)
END CONNECTION (S2014)
DISCONNECTION INFORMATION (S2015)
FOR DEFAULT
S2016
CONNECT MOUSE (S2017)
CONNECTION INFORMATION (S2018)
CANNOT USE
S2019

FIG. 23

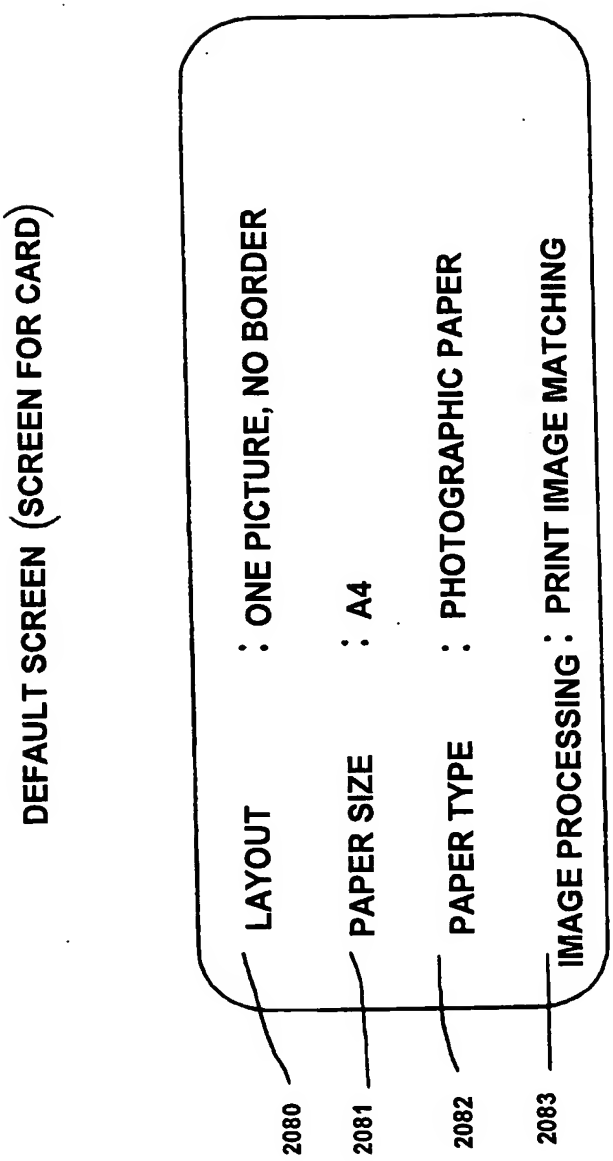
DEFAULT SCREEN (SCREEN FOR CARD)
LAYOUT : ONE PICTURE, NO BORDER
PAPER SIZE : A4
PAPER TYPE : PHOTOGRAPHIC PAPER
IMAGE PROCESSING : PRINT IMAGE MATCHING
2080
2081
2082
2083

FIG. 24

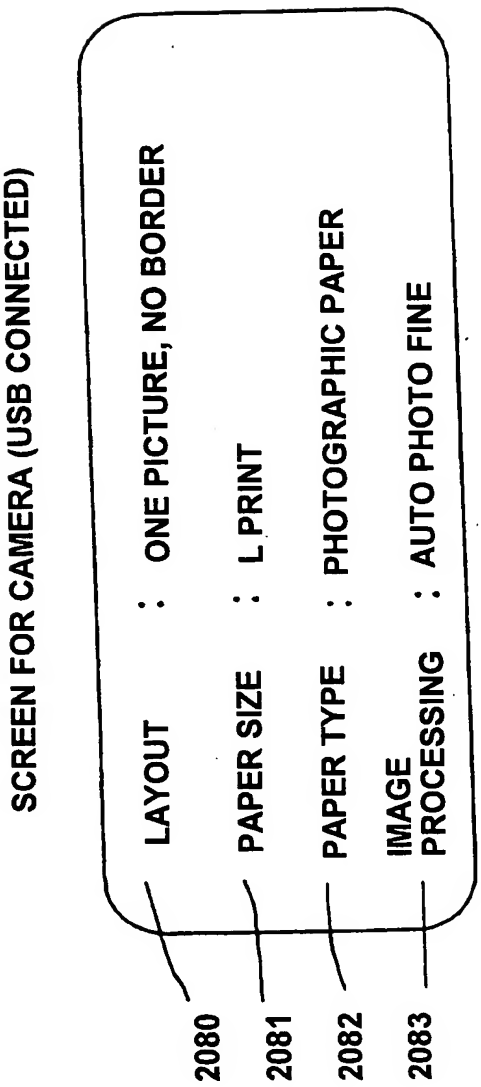
SCREEN FOR CAMERA (USB CONNECTED)
LAYOUT : ONE PICTURE, NO BORDER
PAPER SIZE : L PRINT
PAPER TYPE : PHOTOGRAPHIC PAPER
IMAGE PROCESSING : AUTO PHOTO FINE
2080
2081
2082
2083

FIG. 25

```
<?xml version="1.0"?>
<dps xmlns="http://www.xxxx">
  <startJobRequest>
    <job>
      <jobConfig>
        <quality>01000000</quality>
        <paperSize>02010000 </paperSize>
        <paperType>03020000</paperType>
        <fileType>04150000</fileType>
        <data>05010000</data>
        <fileName>06000000</fileName>
        <imageOptimize>07000000</imageOptimize>
        <layoutItem>08010000 </layoutItem>
      </jobConfig>
      <printInfo>
        <image>
          <imageID>00000001</imageID>
          <imageDate>2002/05/30</imageDate>
        </image>
      </printInfo>
    <job>
  </startJobRequest>
</dps>
```

FIG. 26

```
<?xml version="1.0"?>
<dps xmlns="http://www.xxxx">
  <getFileRequest>
    <fileID>00000001</fileID>
    <buffPtr>00100000</buffPtrt>
  </getFileRequest>
</dps>
```

FIG. 27

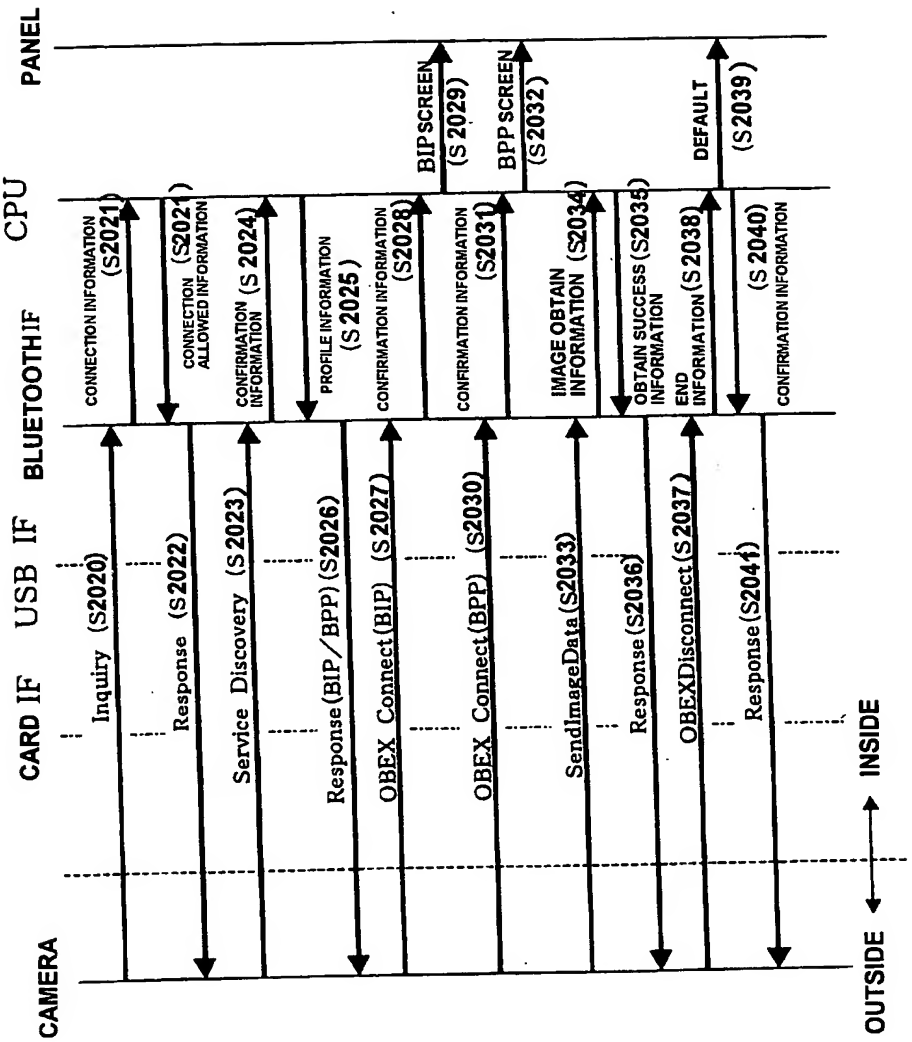
CAMERA
CARD IF
USB IF
BLUETOOTH IF
CPU
PANEL
OUTSIDE
INSIDE
Inquiry (S2020)
Response (S2022)
Service Discovery (S2023)
Response (BIP/BPP) (S2026)
OBEX Connect (BIP) (S2027)
OBEX Connect (BPP) (S2030)
SendImageData (S2033)
Response (S2036)
OBEXDisconnect (S2037)
Response (S2041)
CONNECTION INFORMATION (S2021)
CONNECTION ALLOWED INFORMATION (S2021)
CONFIRMATION INFORMATION (S2024)
PROFILE INFORMATION (S2025)
CONFIRMATION INFORMATION (S2028)
CONFIRMATION INFORMATION (S2031)
IMAGE OBTAIN INFORMATION (S2034)
OBTAIN SUCCESS INFORMATION (S2035)
END INFORMATION (S2038)
(S2040) CONFIRMATION INFORMATION
BIP SCREEN (S2029)
BPP SCREEN (S2032)
DEFAULT (S2039)

FIG. 28

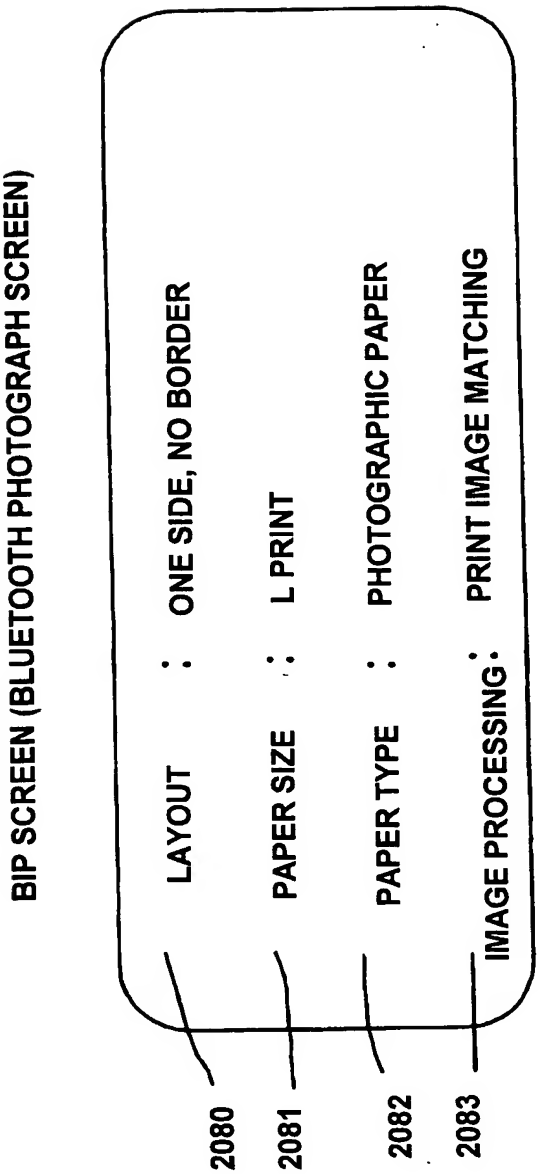
BIP SCREEN (BLUETOOTH PHOTOGRAPH SCREEN)
LAYOUT : ONE SIDE, NO BORDER
PAPER SIZE : L PRINT
PAPER TYPE : PHOTOGRAPHIC PAPER
IMAGE PROCESSING : PRINT IMAGE MATCHING
2080
2081
2082
2083

FIG. 29

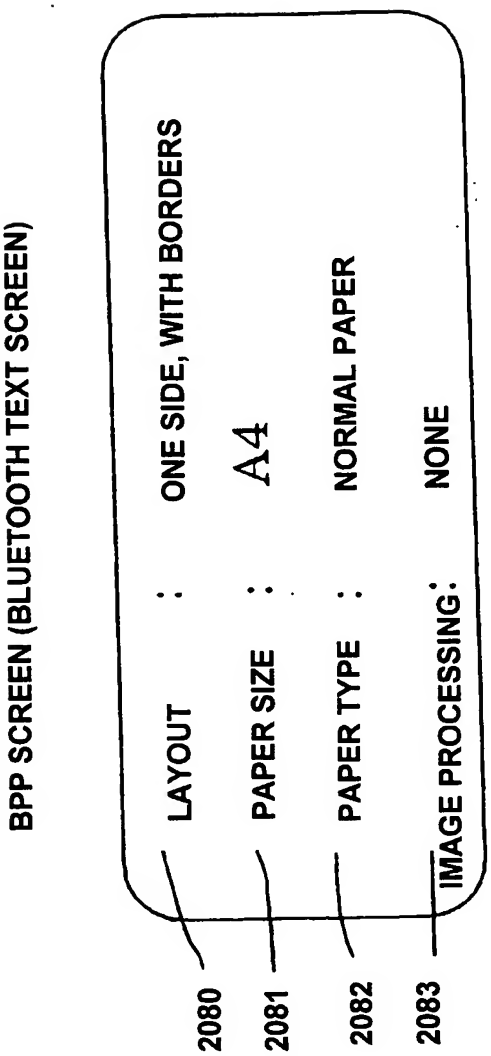
BPP SCREEN (BLUETOOTH TEXT SCREEN)
LAYOUT : ONE SIDE, WITH BORDERS
PAPER SIZE : A4
PAPER TYPE : NORMAL PAPER
IMAGE PROCESSING : NONE
2080
2081
2082
2083

FIG. 30